

# Exhibit Q

**Agenda Item:****Source:** Nokia**Title:** Pre-configurations**Document for:** Discussion and decision

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**1 Introduction**

In [1] it is proposed that depending on whether the UE has broadcast pre-configurations available, cell reselection to a UTRA cell is prioritised. This was proposed to reduce the likelihood of a UE starting a call without a valid broadcast pre-configuration. However, this kind of prioritisation would be against normal cell reselection parameters and criteria set in both in UTRAN and GSM and thereby often against radio condition as well. This means that if the prioritisation was any way made, cell reselection criteria and parameters both in UTRAN and GSM specifications should be modified so that the UE does not come back from UTRAN to GSM based on the normal cell reselection rules. We have not found a good way of defining such double cell reselection criteria therefore in order to include the usage of the pre-configurations into Release99, this type of cell reselection prioritisation should be avoided.

In the next section we introduce our proposal how the UE should read pre-configurations being broadcast in UTRAN.

**2 Proposal**

If dynamic pre-configurations are applied in the network, each UTRA cell transmits the same pre-configurations in its BCCH. The UE periodically checks whether pre-configurations are available in UTRAN BCCH until UTRAN BCCH can be decoded and pre-configurations can be received if they are used in the network. In order to enable reasonable idle mode activity, the UE only attempts to read pre-configurations being broadcast in UTRAN if the signal level of the serving GSM cell is below or above the given threshold  $Q_{\text{search}}$  the same way as the threshold is used in inter-RAT cell reselection from GSM to UTRAN. This way the UE has a better information whether UMTS network should be available. Since dynamic pre-configurations are transmitted in each UMTS cell when the concept is applied in the network, the UE may stop searching for the pre-configuration if it has decoded the BCCH of any UTRAN cell and noticed that pre-configurations are not available in the UTRAN BCCH. The decoding of pre-configurations is made without interrupting paging reception in GSM.

When the UE has attempted to read pre-configurations from UMTS BCCH but it did not succeed e.g. due to poor UTRAN coverage and thereby poor UTRAN signal quality, the MS does not need to try again until a time  $T_{\text{attempt}}$  has expired. The timer  $T_{\text{attempt}}$  is used in order to avoid the MS to attempt to decode UTRAN BCCH all the time. These attempts would interfere paging reception in GSM and they would also result in increased IDLE mode activity.

The concept can be further improved by introducing a bit, which is e.g. transmitted on GSM BCCH and which indicates whether dynamic pre-configurations are used in the PLMN. In this case UE does not have to attempt to decode UTRAN BCCH if the bit indicates that the pre-configurations are not available.

### **3 Conclusions**

In order to introduce the concept of reading the pre-configurations being broadcast in UTRAN some changes are required into the GSM 05.08 specification. The UE has to be required to attempt to decode pre-configurations from UTRAN BCCH provided that the  $Q_{\text{search}}$  threshold criterion is fulfilled while being in GSM idle mode and receiving paging messages. Optionally we could also introduce into the GSM specification a bit to determine whether pre-configurations are broadcast in UTRAN i.e. in each UTRAN cell.

### **4 References**

[1] R2-002015, "Preconfigurations for Release '99 GSM to UMTS handovers", source: Vodafone Group plc, Nortel